BEFORE THE PUBLIC SERVICE COMMISSION OF WISCONSIN

Roadmap to Zero Carbon Investigation 5-EI-158

COMMENTS OF RENEW WISCONSIN

RENEW Wisconsin appreciates the opportunity to provide comments in the investigation now underway to a transition to zero-carbon electricity generation response. A 501(c)(3) organization, RENEW formulates and advocates for policies and programs to create and expand the use of solar power, wind power, biogas, local hydropower, geothermal energy, energy storage and electric vehicles. As stated in the Public Service Commission's request for comments and memo dated April 2, 2021, the agency seeks input from parties for setting priorities for this investigation. In its request, the Commission also seeks suggestions for addressing the issues deemed to be of the highest priority, given the Commission's existing authority.

Introduction. The Commission's initial notice cites the Energy Priorities Law (Wis. Stat. 196.025(1)(ar)) as the primary authority for convening and conducting this investigation. That law directs state and local governmental bodies to give priority to the development and use of energy conservation and efficiency as well as noncombustible renewable energy resources. In our view, the Energy Priorities Law (EPL) established a forward-looking policy climate for accelerating deployment of efficiency and renewables at the moment those resources became technically feasible and cost-effective. Judging from the electric utilities' publicly announced decarbonization goals, as well as recent Commission approvals of utility-owned renewable power plants, that moment has arrived. That said, we believe the Commission should balance utility-scale approaches with other demand-side and distributed approaches that, in our view, can facilitate a faster and less expensive transition to a zero-carbon future. These approaches fall into two categories. The first category is a portfolio of distributed resource options that increase system resilience and offset the need for larger-scale capacity additions. The other category is beneficial electrification, such as the electrification of transportation and building energy use. If deployed aggressively, beneficial electrification would broaden the benefits from an increasingly cleaner generation base to potentially all sectors of society. As we see it, the Commission has ample authority today to identify and pursue the most cost-effective pathways for achieving emissions reductions broadly and in cross-cutting ways.

To organize carbon reduction efforts in a systematic and cost-effective manner, the Commission will need to gather data from many sources, and develop a robust analytical framework for examining the costs and benefits of a multi-tiered approach to decarbonization. At

the same time, it is not too early for the Commission to consider how best to communicate the interim conclusions it reaches from this investigation to the broader public. The Commission should also give serious thought as to how the next iteration of the Strategic Energy Assessment could complement this investigation.

Our top three priorities are:

1. **Develop a Baseline of Information and Metrics for Planning and Tracking Emissions Reduction Strategies, and a Platform for Communicating Results.**
2. **Integrate a Full Portfolio of Distributed Energy Resource Options into the Roadmap.**
3. **Expand an Increasingly Cleaner Grid to Electrify Transportation and Buildings (Beneficial Electrification).**

Priority 1. Develop a Baseline of Information and Metrics for Planning and Tracking Emissions Reduction Strategies, and a Platform for Communicating Results.

a. Measure, Track and Communicate Carbon Emission Impacts from Commission Proceedings. The Commission is presently reviewing a half-dozen utility applications to add renewable generation to their respective portfolios. Utility applications provide much useful information regarding individual utility system needs and forecasts of future capacity additions and plant retirements. But utility applications are in large part silent on estimated greenhouse gas impacts of proposed generation sources. Though we learn from utility filings that renewable resource generation is a carbon-free energy source, there are no hard numbers on avoided carbon emissions. In light of this conspicuous data gap, our first recommendation relating to this investigation is to **develop metrics for quantifying and tracking the carbon emissions impacts in applications requiring Commission approval, and to communicate those impacts to the public.** This should include all utility applications to purchase or construct generation facilities, transmission facilities, natural gas extensions, etc. Instituting this protocol is, in our view, a necessary first step in any integrated initiative to monetize the value of different carbon reduction strategies. This protocol can be instituted under the Commission's current legal authority, and should apply to gas infrastructure as well.

b. Pursue Third-Party Development of Data Gathering and Economic Analysis to Model Impacts from Carbon Reduction Strategies and Scenarios. As things stand now, there is no single forum for organizing and synthesizing the anticipated carbon reduction impacts from the many utility proceedings into a coherent picture statewide. Right now, electric utilities are pursuing their various carbon reduction goals in parallel with each other. While some applications involve more than one utility, it remains a challenge for anyone to piece these

actions together and assess cross-sector global impacts. Yet the necessity of such analysis to inform and guide the Commission in the early stages of this investigation could not be greater. If the Commission finds that it lacks the tools and the staff resources to undertake this analysis, it should consider engaging full party intervenors to provide assistance to strengthen and test the underlying set of facts and assumptions. An example of the kind of analysis that can be brought to bear in this proceeding is the 2019 report prepared by Advanced Energy Economy for the Commonwealth of Virginia. Titled "***Virginia's Energy Transition: Charting the Benefits and Tradeoffs of Virginia's Transition to a 100% Clean Grid***," this report modeled three zero carbon scenarios involving efficiency, renewables, and battery storage, and calculated their impacts in terms of ratepayer impacts, health and environmental benefits, and jobs and income created. Another report example is "***Minnesota's Smarter Grid: Pathways Toward a Clean, Reliable, and Affordable Transportation and Energy System***." A report similar to these Virginia and Minnesota examples would help inform the Zero Carbon Roadmap docket.

Priority 2. Integrate a Full Portfolio of Distributed Energy Resource Options into the Roadmap.

In designing their plans to reduce the carbon intensity of their operations, Wisconsin electricity providers are showing a clear preference for utility-scale supply-side options: retiring uneconomic fossil generation and replacing that capacity with a combination of large-scale solar power and associated energy storage facilities. The anticipated carbon reductions from that turnover in the generation fleet will be considerable. It is vitally important, however, that this approach does not foreclose opportunities for customers to lower the carbon intensity of the grid through efficiency-based strategies and distributed clean power production. Many utility customers, including businesses (e.g., Aspirus Health), school districts (e.g., Oregon, Rice Lake) and local governments (e.g., Dane and Bayfield counties) have adopted carbon reduction goals of their own, and are investing their own funds into demand-side measures and clean energy deployment for their operations. As noted above, the EPL applies to local governments as well as the State of Wisconsin. The Commission should give priority to the development of pilot programs and rate structures that would advance and manage customer use of distributed energy resources.

As important as the utilities supply-based approaches are, it is crucial that the road map facilitates bottom-up pathways for achieving systemwide carbon reduction goals, combining demand response aggregation, whole-building efficiency and electrification, clean transportation, customer-centered storage systems and microgrids, and distributed applications of renewable generation, involving both behind-the-meter and off-site installations. By taking advantage of their customers' willingness to be flexible and forward-thinking in their energy use, utilities will have an opportunity to realize more value from their distribution grids, pointing the way to

systemwide savings. In developing its road map, the Commission will need to ensure that zero carbon distributed energy options receive the attention and resources they deserve.

Priority 3. Expand an Increasingly Cleaner Grid to Electrify Transportation and Buildings (Beneficial Electrification).

Beneficial electrification is the practice of electrifying energy end uses now powered by fossil fuels as a strategy for reducing greenhouse gas emissions and securing other benefits. While the value proposition of beneficial electrification hinges in part on the pace of decarbonization occurring in the utility grid, the concept envisions expanding and extending an increasingly cleaner grid to wider sections of the economy. Thus, we believe that beneficial electrification should occupy a central role in the Commission's road map to zero carbon. It's not too early to prepare for the grid's increased centrality to the broader economy, which necessitates planning for an increase in electricity usage at some point in the future. This increase will occur even as resources are mobilized to reduce unnecessary energy usage and heighten grid interactivity.

One obvious carbon emissions reduction opportunity is the transportation sector. As a first-order consideration, the Commission should strive to take full advantage of the growing electric vehicle (EV) marketplace. In addition to securing long-term greenhouse gas reductions, EVs can benefit ratepayers through their impact on utility assets. EVs represent a flexible load that can help flatten load curves, improve overall system efficiency, promote grid utilization of renewable generation, and thus lower electric costs for all ratepayers. As with distributed resource energy options, capturing these benefits will require both overcoming barriers and innovative rate options.

Another target for electrification is the building sector, which is responsible for roughly 15% of the energy-related carbon emissions in Wisconsin. The vast majority of the state's inventory of buildings uses fossil fuel to supply interior heating. In light of that fact, it will be necessary to go beyond traditional energy efficiency measures to secure meaningful carbon emission reductions. Electrification of buildings, then, represents the pathway with the most promise for achieving deep reductions in fossil fuel use. Fortunately for the Commission, building electrification can be accomplished today in a cost-effective manner, taking advantage of improvements in heat pump technology. Heat pumps today have advanced to the point where they should be treated as a high priority resource under the Energy Priorities Law. Programs overseen by the Commission, such as Focus on Energy and the Office of Energy Innovation grant program, should realign their goals and incentive structures to promote building electrification.

To encourage whole building approaches to decarbonization, we recommend that the Commission revise its policy on submetering buildings, especially multifamily dwellings. Requiring individual electric meters in apartment buildings presents a huge economic and regulatory barrier to landlords wishing to decarbonize their properties. Due to the cost and complexity of wiring solar output to individual meters, landlords generally size solar systems to supply only the house meter. This situation applies to new construction as well as existing buildings. This problem could be cost-effectively addressed by a submetering arrangement that consolidates all of the separate electric services into one large utility-facing service. Submetering would also expand a landlord's decarbonization toolbox to include heat pumps and mini-split systems, which, when combined with solar power, would dramatically reduce heating/cooling costs **for the whole building**. We note that submetering arrangements with building tenants are common with water and gas, even though both are also utility services at most locations.

Conclusion: We urge the Commission to gather data from many sources, including those from other states, and use it to develop a robust analytical framework for examining the costs and benefits of a multi-tiered approach to decarbonization. This will involve the development of a protocol for measuring and tracking the effectiveness of the Commission's road map. We also recommend that the Commission integrate a full portfolio of distributed energy resource options into its road map, and align its priorities to take full advantage of the many benefits from electrifying vehicles and buildings. The approach we've outlined is actionable under the Commission's current authority, and should produce significant ratepayer savings while dramatically reducing carbon emissions economywide.

Thank you for this opportunity to comment. This docket represents a tremendous opportunity to address critical issues for Wisconsin's future. We encourage you to employ the full authority of the Commission with respect to emissions tracking, distributed renewable energy, and beneficial electrification. We look forward to engaging in the next steps in this process.

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